**Precalculus**

**Notes 4.8: Applications**

**Ex. 1:** Solve the right triangle for all unknown sides.

**Ex. 2:** A safety regulation states that the maximum angle of elevation for a rescue ladder is . A fire department’s longest ladder is 110 feet. What is the maximum safe rescue height?

**Ex. 3:** At a point 200 feet from the base of a building, the angle of elevation to the *bottom* of a smokestack is , whereas the angle of elevation to the *top* is . Draw a picture!

**Ex. 4:** A swimming pool is 20 meters long and 12 meters wide. The bottom of the pool is slanted so that the water depth is 1.3 meters as the shallow end and 4 meters at the deep end. Find the angle of depression of the bottom of the pool. Draw a picture!

Bearings (Examples)

**Ex. 5:** A ship leaves port at noon and heads due west at 20 knots, or 20 nautical miles (nm) per hour. At 2 P.M. the ship changes course to N W. Find the ship’s bearing and distance from the port of departure at 3 P.M.